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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/677,966 | 10/02/2003 | Cyril Allouche | 14XZ126398 | 9272 |

7590 03/22/2007
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| EXAMINER |
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SMITH, JEFFREY S

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| ART UNIT | PAPER NUMBER |
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2624

| SHORTENED STATUTORY PERIOD OF RESPONSE | MAIL DATE | DELIVERY MODE |
|--|------------|---------------|
| 3 MONTHS | 03/22/2007 | PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/677,966

Applicant(s)

ALLOUCHE, CYRIL

Examiner

Jeffrey S. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41, 43-54 and 56-60 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26, 31-34, 39-41, 43-54, 56 and 57 is/are rejected.
- 7) ☒ Claim(s) 27-30, 35-38 and 58-60 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Specification

2. The disclosure is objected to because in paragraph 30, a "convolution curve" should read a "convolution core." Appropriate correction is required.

Claim Objections

3. Claims 2-4 are objected to because of the following informalities.

In claim 2, lambda and sigma are undefined. An example of a clear definition of sigma is given in claim 3, "a known noise statistic σ ." If the noise statistic mentioned in claim 2 is the same as that of claim 3, then changing "a noise statistic" in claim 2 to "a noise statistic σ " would define this term for claim 2.

In claims 3 and 4, epsilon is unclear. Claims 3 and 4 state that epsilon is a computed difference, but of what is unclear. If this computed difference is the same as the difference that is computed in claim 2, then changing "a difference" to "a difference ϵ " in claim 2 would clarify the difference represented by epsilon for claims 3 and 4.

In claim 4, line 3, "et" is unclear.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-26, 31-34, 39-41, 43-54, and 56-57 are rejected under 35 U.S.C. 102(a) and (e) based on U.S. Patent No. 6,728,415 issued to Shaw ("Shaw").

For claims 1-25, 39-41, 48-50, and 56-57, when gamma is zero, there is only one image present in the convolution equation of claim 1. This reads on the convolution shown in Shaw.

For claims 26, 31-33, and 51, which recite "wherein D is equal to 5", the convolution core of the equation in claim 1 has a dimension of 5. When gamma is zero, then there is one image that is processed with the convolution core having dimension 5. This dimension is shown in Shaw in Table 1, where the convolution core has a dimension of 5. (See column 2 lines 35-30.)

For claims 34 and 52, which recite "wherein D is greater than 5," this is disclosed by Shaw. (See column 1 lines 45-50, which states that the core (called a filter or kernel in Shaw) can have a rectangular configuration of any size.

For claims 43-52, Shaw has a convolution core where D is an odd number.

Response to Arguments

Applicant has stated that the certified copy of the priority document has been submitted. This is true, and accordingly, acknowledgement of the claim has been made in paragraph 1 of this action.

Applicant submits that the objections to the specification have been overcome. However, there is one outstanding minor objection as discussed in paragraph 2 of this action. The examiner has offered a suggestion for overcoming the objection.

Applicant submits that the rejections under 35 U.S.C. 112 have been overcome. This is true, however, a few minor points of confusion in the claim language remain as discussed in paragraph 3 of this action. The examiner has offered suggestions to clarify the claims and overcome the objections where possible.

Applicant submits that the rejections under 35 U.S.C. 101 have been overcome. This is true for the reasons given by applicant in the amendment.

Applicant submits that the rejection under 35 U.S.C. 102(b) based on applicant's admitted prior art has been overcome by amending all pending independent claims to recite "D is greater than 1." This is true, applicant's admitted prior art does not disclose convolution of two images where the convolution core D is greater than 1 and the convolution is performed in the manner recited in all independent claims as amended. However, Shaw has a convolution core D greater than 1 as discussed below.

Applicant submits that the rejections under 35 U.S.C. 102(a) and 102(e) based on Shaw have been overcome. This is incorrect. Applicant's arguments filed February

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20, 2007 have been fully considered but they are not persuasive. In that paper, applicant has stated

Specifically, Applicant submits that Shaw is absent any disclosure of the claimed "...for each pixel with coordinates (x,y) of the first image, a weighting is performed on the coefficients $U(k,l)$ of the first convolution core as a function of the coefficient G which is a function of the difference computed between $I(x,y)$ and $I'(x+k, y+l)$, where $I'(x,y)$ is an intensity of the pixel with coordinates (x,y) of a second image, a third convolution core with coefficients $U_p'(k,l)$ being thus obtained..."

Applicant's statement appears to be asserting the proposition that the second image is a required element of the claims. However, the second image is an optional element in the claims.

Support for the second image as an optional element is found for example in claim 1 when gamma is zero, the first image is not present in the claims. In this case, when gamma is zero the term "a second image" lacks antecedent basis because the claim lacks a first image. In other words, the "second image" is the only image present in the claims. The term "a third convolution core" lacks antecedent basis because there is no second convolution core when gamma is zero. The term "space-time" filtering in the preamble is also unclear because the filtering has no "time" component.

Similarly, when gamma is one, then the second image, the third convolution core and the space-time filtering are not present in the claim.

Additional support for the second image as an optional element is found for example in claims 13-18, which recite a value of gamma equal to zero implies a zero temporal dependence. In other words, only one image taken at one time is present, and

a second image taken at a different time is not present, which results in "zero temporal dependence" as recited in claims 13-18.

Clearly claims 13-18 do not add an additional element to claim 1, but rather clarify a feature of the current elements.

Additional support for the second image as an optional element is found for example in paragraphs 35, 46 of the specification.

Allowable Subject Matter

Claims 27-30, 35-38 and 58-60 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey S. Smith whose telephone number is 571 270-1235. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jingge Wu can be reached on 571 272-7429. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JSS
March 7, 2007


JINGGE WU
SUPERVISORY PATENT EXAMINER